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Intellectual Property, Asian Philosophy and the Yin-Yang School

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Introduction

Since its inception, *The WIPO Journal* has devoted the first issue of every volume to intellectual property topics within a specific discipline. Thus far, the journal has covered law and policy, economics, politics, culture, history and geography. This issue will focus on intellectual property philosophy. Although this area has been quite extensively covered in scholarly literature, especially in regard to the nature and justification of intellectual property rights, intellectual property philosophy has not yet been featured in any special issue of this journal.

As far as the scholarship in this area is concerned, one can easily recall the pioneering articles by Wendy Gordon, Edwin Hettinger, Justin Hughes and Jeremy Waldron[1]; the widely cited book on intellectual property philosophy by Peter Drahos[2]; and many latest writings that go beyond the traditional discussions of John Locke, Georg Wilhelm Friedrich Hegel, Immanuel Kant and Karl Marx.[3] In *Justifying Intellectual Property*, Robert Merges also draws on insights from John Rawls, Robert Nozick and Jeremy Waldron to explore the foundation of the intellectual property system and to locate what he described as "midlevel principles" of intellectual property law.[4]

Thus far, virtually all of the writings on intellectual property philosophy have focused on Western literature. This Western-centric focus is unsurprising considering that most scholars who have explored these topics either come from or have studied in the West, including Europe, North America, Australia and New Zealand. The intellectual property system, while not necessarily a Western construct, is also generally considered to have originated in the West. Although it remains debatable whether indigenous notions of intellectual property rights existed in the East—as some Chinese scholars have claimed[5]—commentators have repeatedly traced the global patent system to the Venetian Republic in the 15th century and the copyright system to the English Statute of Anne as well as some early French statutes.

As an introduction to a special issue on intellectual property philosophy, this article focuses on insights from Asian thought. Such a focus is needed not only to provide balance within this special issue, which

[1] Wendy J. Gordon, "A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property" (1993) 102 Yale L.J. 1533; Edwin C. Hettinger, "Justifying Intellectual Property" (1989) 18 Phil. & Pub. Aff. 31; Justin Hughes, "The Philosophy of Intellectual Property" (1988) 77 Geo. L.J. 287; Jeremy Waldron, "From Authors to Copiers: Individual Rights and Social Values in Intellectual Property" (1992) 68 Chi.-Kent. L. Rev. 841.

[2] Peter Drahos, *A Philosophy of Intellectual Property* (Aldershot: Dartmouth, 1996).

[3] E.g. Axel Gosseries, Alain Marciano and Alain Strowel (eds), *Intellectual Property and Theories of Justice* (Basingstoke: Palgrave Macmillan, 2008); Annabelle Lever (ed.), *New Frontiers in the Philosophy of Intellectual Property* (Cambridge: Cambridge University Press, 2012); Symposium, "The Philosophical Foundations of Intellectual Property" (2012) 49 San Diego L. Rev. 955–1282.

[4] Robert P. Merges, *Justifying Intellectual Property* (Cambridge, MA: Harvard University Press, 2011), pp.102–136.

[5] E.g. Zhou Lin and Li Mingshan (eds), *Historical Documents of China's Copyright Law* (Beijing: Zhongguo Fangzheng Publishing, 1999) (in Chinese); Ken Shao, "The Global Debates on Intellectual Property: What If China Is Not a Born Pirate?" [2010] Intell. Prop. Q. 341.

includes articles focusing primarily on Western philosophy, but also to highlight the compatibility between Asian philosophy and the notion of intellectual property rights. More importantly, this article aims to demonstrate that Asian philosophy may suggest new ways to address the ongoing and highly complex intellectual property challenges confronting emerging economies and the digital environment.

Greater engagement with Asian philosophy in the intellectual property arena is highly important from various standpoints—theoretical, policy and strategic. Such an engagement is also timely and urgent considering the continued massive piracy and counterfeiting problems in Asia, the growing attention to the technological rise of Asian countries, the rejuvenated interest in Confucianism in China and elsewhere, the recently concluded negotiations on the Trans-Pacific Partnership Agreement as well as the ongoing negotiation of the Regional Comprehensive Economic Partnership under the ASEAN+6 framework.

This article begins by providing a brief discussion of the many different schools of Asian philosophy, including those in China and India. Although Confucianism has garnered considerable attention in intellectual property literature, the nexus between Asian philosophy and the notion of intellectual property rights remains largely understudied. Thus, instead of revisiting the debate on intellectual property and Confucianism, this article aims to introduce to the Western audience Yin-Yang, one of the six dominant ancient schools of Chinese philosophy. It argues that this school's focus on contexts, relationships and adaptiveness and its high tolerance for contradictions have made it particularly well-equipped to address the ongoing intellectual property challenges concerning both emerging economies and the digital environment.

Asian philosophy

In his book, Kishore Mahbubani asked a thought-provoking question, "Can Asians think?"[6] His question goes in two directions. First, can Asians think—and if so, "why have Asian societies lost a thousand years and slipped far behind the European societies that they were far ahead of at the turn of the last millennium"?[7] Secondly, if Asians can think, can they "think for themselves"? This question is important not just in the policy arena (the focus of his book), but also in regard to innovation and development—and, of course for us, the development of intellectual property law and policy. To Dean Mahbubani, it is important that "Asian societies can enter the modern universe as Asian societies rather than Western replicas".[8]

The short answer to his highly provocative question is, "Of course, Asians can think." Indeed, a growing volume of scholarship has explored the nexus between Asian philosophy and the notion of intellectual property rights. In an earlier special issue of this journal on intellectual property and culture, for instance, I contributed an article on the Confucian challenges to intellectual property reforms in China and other parts of Asia.[9] In that article, I specifically examined the compatibility between Confucianism and the notion of intellectual property rights, the gradual but dramatic evolution of this school of philosophy in the last two millennia, and the problem of using Confucianism as a proxy for either Chinese or Asian philosophy.

In a later book chapter, which expanded on that article, I further noted that Confucianism could provide useful explanations for the improved protection and enforcement of intellectual property rights in China and other parts of Asia.[10] As stated in the preface to a book on Confucian humanism:

> "Confucian ethics, as reflected in government leadership, competitive education, meritocratic elitism, social interaction, a disciplined work force, principles of equality and self-reliance, and self-cultivation,

[6] Kishore Mahbubani, *Can Asians Think?*, 4th edn (Singapore: Marshall Cavendish, 2009).
[7] Mahbubani, *Can Asians Think?* (2009), p.11.
[8] Mahbubani, *Can Asians Think?* (2009), p.38.
[9] Peter K. Yu, "The Confucian Challenge to Intellectual Property Reforms" (2012) 4 WIPO J. 1.
[10] Peter K. Yu, "Intellectual Property and Confucianism" in Irene Calboli and Srividhya Ragavan (eds), *Diversity in Intellectual Property: Identities, Interests, and Intersections* (Cambridge: Cambridge University Press, 2015).

> provides a necessary background and a powerful motivating force for the rise of industrial East Asia."[11]

Thus, if one takes seriously the claim that Confucianism has had both historical and continuous influence on intellectual property developments in Asian countries—or, worse, condemns Confucianism for blocking or slowing down intellectual property reforms—one has to be prepared to rebut the argument that Confucianism should be credited for the more promising recent developments in Asian countries.

That book chapter did not stop there, however. It went further to suggest that Confucianism may provide important insight into solving some of the most treacherous problems in today's international intellectual property regime:

> "For example, would a Confucian system of intellectual property rights—which emphasizes harmony, balance, and social responsibility—strike a better balance between proprietary interests and public access needs? Would the Confucian approach to resolving disputes hold the key to the litigation explosion in the intellectual property field and the continuing problems concerning so-called copyright, patent, and trademark trolls? Would the Confucian focus on virtue, benevolence, and familial values be conducive to reducing disagreements between developed and developing countries in the intellectual property arena? Finally, would Confucianism provide important insight into the growing popularity of open source, free culture, and access to knowledge movements?"[12]

Although Confucianism remains one of most dominant schools of philosophy in China—due partly to its widespread use for self-cultivation and partly to the heavy influence of the imperial civil service examinations—Chinese thought includes many different schools of philosophy. In the last chapter of the *Historical Records* (*Shiji*), for instance, Sima Qian, the grand historian in the Han Dynasty (206 BC–220 AD), recalled the six dominant schools of Chinese philosophies: (1) Yin-Yang; (2) Confucianism (or, more properly, *Rujia*); (3) Mohism (*Mojia*); (4) School of Names, Dialecticians or Logicians (*Mingjia*); (5) Legalism (*Fajia*); and (6) Daoism, which derived from the teachings of Laozi and Zhuangzi.[13]

When one looks beyond China, one will also see the heavy influence of non-Chinese philosophy. It is no coincidence that George Coedès wrote a book on the "Indianization" of Southeast Asian states.[14] David Kang also reminded us that "the states of Southeast Asia experienced twin cultural influences, from India and from China".[15] Indeed, recent scholarship, while still scant, has provided useful discussions of the nexus between Indian philosophy and the notion of intellectual property rights.

For example, in a recent book chapter, Prabha Sridevan, a retired judge of the Madras High Court, showed us how ancient Vedic texts in Sanskit could shed light on Indian thinking on knowledge, creativity and sharing.[16] In her book on moral rights, Mira Sundara Rajan drew attention to the Sanskrit term "rasa", which "describes the ecstatic essence of the creative moment … and … is made possible by the shared experience of artist and audience".[17] In addition, Shyamkrishna Balganesh extracted important contemporary lessons from Mahatma Gandhi's thinking on copyright law—in particular, how the pragmatism and nuance that he developed as a colonial lawyer tempered his "philosophical opposition to market-oriented utilitarianism".[18] Finally, writing for a symposium on "Intellectual Property and Religious Thought",

[11] "Preface" in Tu Weiming, Milan Hejtmanek and Alan Wachman (eds), *The Confucian World Observed: A Contemporary Discussion of Confucian Humanism in East Asia* (Honolulu: East-West Center, 1992), p.vii.
[12] Yu, "Intellectual Property and Confucianism" in Calboli and Ragavan (eds), *Diversity in Intellectual Property* (2015), p.270.
[13] Fung Yu-Lan, *A Short History of Chinese Philosophy: A Systematic Account of Chinese Thought from Its Origins to the Present Day*, translated by Derk Bodde (New York: Free Press, 1948), pp.30–31.
[14] George Coedès, *The Indianized States of Southeast Asia*, edited by Walter F. Vella and translated by Sue Brown Cowing (Honolulu: University of Hawaii Press, 1996).
[15] David C. Kang, *East Asia before the West: Five Centuries of Trade and Tribute* (New York: Columbia University Press, 2010), p.52.
[16] Prabha Sridevan, "Intellectual Property in the Ancient Indian Texts" in Calboli and Ragavan (eds), *Diversity in Intellectual Property* (2015).
[17] Mira T. Sundara Rajan, *Moral Rights: Principles, Practice and New Technology* (Oxford: Oxford University Press, 2011), p.22.
[18] Shyamkrishna Balganesh, "Gandhi and Copyright Pragmatism" (2013) 101 Calif. L. Rev. 1705.

Shubha Ghosh utilised the debates on duty in ethical and religious thought in the Hindu text *The Bhagavad Gita* to advance his proposal for a duty-based justification for intellectual property rights.[19]

In sum, Asians can think, and many different—and at times rival—schools of philosophy originated in Asia. In the past two decades, commentators have paid growing attention to the relationship between Confucianism and intellectual property rights, due in large part to the massive piracy and counterfeiting problems in China and the sadly seductive nature of using cultural barriers to account for these problems. Nevertheless, the discussion of Asian philosophy in the intellectual property context remains limited. If history is any guide, Asians will continue to think and think for themselves. The more difficult question, however, is what insights Asian philosophy can provide into our study of intellectual property rights and our effort to formulate legal and policy reforms.

Yin and Yang

In this article, I do not seek to revisit the debate on intellectual property and Confucianism. Instead, I want to introduce a different school of Chinese philosophy that Sima Qian listed among the six dominant schools in the *Historical Records*: Yin-Yang.

As far as I am aware, no scholar in either the East or the West has ever explored the nexus between intellectual property rights and the Yin-Yang school of philosophy in an English-language publication. So, the exploration here is necessarily preliminary and incomprehensive. For a topic of first impression, the short length of this article also presents some challenge. Nevertheless, it is my hope that the discussion here will provoke you to think more deeply about the alternative ways to address the ongoing intellectual property challenges confronting both emerging economies and the digital environment. If this article can disrupt the existing discourse on intellectual property developments in Asia or get judges, policy makers and commentators to rethink their values, assumptions, worldviews and philosophical predispositions, the article will have done its job.

Yin-Yang is one of the most longstanding and influential schools of Chinese philosophy. As Chan Wing-Tsit described:

> "The Yin Yang doctrine is very simple but its influence has been extensive. No aspect of Chinese civilization—whether metaphysics, medicine, government, or art—has escaped its imprint. In simple terms, the doctrine teaches that all things and events are products of two elements, forces, or principles: Yin, which is negative, passive, weak and destructive, and yang, which is positive, active, strong, and constructive."[20]

While "femininity, passivity, cold, darkness, wetness, softness" are yin, "masculinity, activity, heat, brightness, dryness, hardness" are yang.[21]

Zou Yan (305–240 BC) "is often mentioned as the representative thinker of this school, but his work is lost and all that we have about him is a brief account of his life and thought in the [*Historical Records*]".[22] The paired concepts of yin and yang, however, appeared in literature before Zou's time, such as *Zuozhuan*, *Laozi*, *Zhuangzi* and *Xunzi*.[23] Book 17 of *Xunzi*, for instance, declared: "Those charged with recording the Yin and Yang observe their interaction and can bring about order" (*suo zhi yu yinyangzhe / yi qi jian he zhi keyi zhuzhe yi*).[24] Notwithstanding these allusions, the discussion of the yin-yang concept, curiously, cannot be "found in early Confucian texts such as the *Analects*, *Mengzi*, *The Great Learning* [*Daxue*], or

[19] Shubha Ghosh, "Duty, Consequences, & Intellectual Property" (2013) 10 U. St. Thomas L.J. 801.
[20] Chan Wing-Tsit, *A Sourcebook in Chinese Philosophy* (Princeton: Princeton University Press, 1963), p.244.
[21] Fung, *A Short History of Chinese Philosophy* (1948), p.138.
[22] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.244.
[23] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.244.
[24] Robin R. Wang, *Yinyang: The Way of Heaven and Earth in Chinese Thought and Culture* (Cambridge: Cambridge University Press, 2012), p.1.

Zhongyong [*The Doctrine of the Mean*], and there is only one mention [of the concept] in … *Daodejing* [*The Book of the Way*]".[25]

Thus far, the Yin-Yang school of philosophy has been largely under-researched, as "its thought and practices have been ignored in academic studies as a result of the limited sources and its difficulty and obscurity".[26] Nevertheless, the basic insight about the yin-yang pairing, or juxtaposition, of "complementary opposites"[27] is well-known in both the East and the West. Indeed, "[b]ecause yin and yang are the most commonly known concepts from Chinese philosophy, they have practically become English words themselves".[28]

The correlative thinking espoused in the Yin-Yang school of philosophy has considerable appeal to both a general and specialised audience. In a carefully analysed and well-documented book, Robin Wang outlined the six different relationships within the yin-yang cosmology.[29] The first relationship is *maodun* (contradiction and opposition). As Professor Wang explained:

> "Although yinyang thought may prompt us to think of harmony, interconnection, and wholeness, the basis of any yinyang distinction is difference, opposition, and contradiction. Any two sides are connected and related, but they are also opposed in some way, like light and dark, male and female, forceful and yielding. It is the tension and difference between the two sides that allows for the dynamic energy that comes through their interactions. It is also this difference that enables yinyang as a strategy—to act successfully, we must sometimes be more yin and sometimes more yang, depending on the context."[30]

The second relationship is *xiangyi* (interdependence). A key understanding of this relationship is that "[o]ne side of the opposition cannot exist without the other"—for example, "[o]ne cannot have a concept of 'good' without there existing a concept of 'bad'".[31] Notwithstanding this key understanding, "the interdependence of opposites does not simply refer to the relativity of our concepts, but also to how things themselves exist, grow, and function".[32] Inherent in this interdependence is the need for rotation, or alteration, between yin and yang. Although the sun may embody yang, which "originally meant sunshine, or what pertains to sunshine and light",[33] it must set every day to give way to yin before rising again the next morning.

The third relationship is *huhan* (mutual inclusion). In Professor Wang's words:

> "If yin depends on yang, then yang is always implicated in yin; in other words, yin cannot be adequately characterized without also taking account of yang. The same is true of yang—it necessarily involves yin."[34]

Thus, "even something that is strongly yang can be considered yin in some relations".[35] Moreover, because of the constant rotation or alteration, "yang always holds some yin and yin holds some yang".[36] In his book, Professor Wang used the cycle of four seasons to illustrate this mutually inclusive relationship:

[25] Wang, *Yinyang* (2012), p.32.
[26] Wang, *Yinyang* (2012), p.33.
[27] Cheng Chung-Ying, "Chinese Metaphysics as Non-Metaphysics: Confucian and Taoist Insights into the Nature of Reality" in Robert E. Allinson (ed.), *Understanding the Chinese Mind: The Philosophical Roots* (Oxford: Oxford University Press, 1991), p.177.
[28] Wang, *Yinyang* (2012), p.1.
[29] Wang, *Yinyang* (2012), pp.7–12.
[30] Wang, *Yinyang* (2012), p.8.
[31] Wang, *Yinyang* (2012), p.9.
[32] Wang, *Yinyang* (2012), p.9.
[33] Fung, *A Short History of Chinese Philosophy* (1948), p.138.
[34] Wang, *Yinyang* (2012), p.9.
[35] Wang, *Yinyang* (2012), p.9.
[36] Wang, *Yinyang* (2012), p.9.

> "[S]ummer is the most yang of the seasons, yet it contains a yin force which will begin to emerge in the summer, extend through the fall, and reach its culmination in the winter. Winter is the highest stage of yin, yet it unfolds a yang force that will attain its own full swing though spring to summer."[37]

The fourth relationship is *jiaogan* (interaction or resonance). As Professor Wang reminded us: "Each element influences and shapes the other. If yin and yang are interdependent and mutually inclusive, then a change in one will necessarily produce a change in the other."[38] A case in point concerns the interactions between metal, wood and fire (three of the Five Elements in Chinese thought): "metal can conquer wood, however, wood can generate fire, which controls metal".[39] As a matter of strategy, *jiaogan* is both important and somewhat counterintuitive, as it suggests that "one can influence any element by addressing its opposite".[40]

The fifth relationship is *hubu* (complementarity or mutual support). As Professor Wang declared:

> "[E]ach side supplies what the other lacks. Given that yin and yang are different but interdependent, properly declaring what a situation often requires supplementing one with the other, which is a way of achieving the appropriate balance between the two."[41]

The final relationship is *zhuanhua* (change and transformation). According to Professor Wang, "One side becomes the other in an endless cycle. Yinyang thought is fundamentally dynamic and centers on change."[42] Within the yin-yang cosmology, change is perpetual, and "[r]eversal … [remains] a constant theme".[43] As Jack Balkin observed in regard to the *Book of Changes*, which not only utilises yin-yang thinking but also provides a deep understanding of life's changes:

> "The basic lesson of [this book] is that everything changes. Good times turn to bad, and bad times eventually improve. Even during the most peaceful and prosperous conditions, difficulties, decay, and evil are merely held in check and are never completely eliminated."[44]

Taken together, these six disparate relationships reveal the ambition of the Yin-Yang school of philosophy. Representing some of the earliest Chinese attempts to "[work] out a metaphysics and a cosmology",[45] this school seeks to "creat[e] a truly inclusive system of thought—a system that would embrace and explain the phenomena of the entire universe".[46] Instead of providing guideposts for self-cultivation and focusing on the way of life—as Confucianism does—the Yin-Yang school sheds light on the "Way of Heaven" or the "Way of Earth".[47]

This school of thought resonates particularly well with Asian culture. Classified by Edward Hall and other commentators as "high-context", this culture demands a sophisticated understanding of contexts, relationships, interactions and contingencies.[48] Although it is hard to make cross-cultural comparisons without avoiding convenient generalisations and stereotypes, psychological research has shown that Asians "tended to be more 'holistic', showing greater attention to context, a tolerance for contradiction and less

[37] Wang, *Yinyang* (2012), pp.9–10.
[38] Wang, *Yinyang* (2012), p.10.
[39] Wang, *Yinyang* (2012), p.38. The Five Elements (*wuxing*) are water, fire, wood, metal and earth.
[40] Wang, *Yinyang* (2012), p.10.
[41] Wang, *Yinyang* (2012), p.11.
[42] Wang, *Yinyang* (2012), p.11.
[43] Wang, *Yinyang* (2012), p.11.
[44] Jack M. Balkin, *The Laws of Change: I Ching and the Philosophy of Life* (New York: Schocken Books, 2002), p.197.
[45] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.245.
[46] Fung Yu-Lan, *A History of Chinese Philosophy* (Princeton: Princeton University Press, 1983), Vol.2, p.131.
[47] A.C. Graham, *Yin-Yang and the Nature of Correlative Thinking* (Singapore: Institute of East Asian Philosophies, 1986), p.31.
[48] As Edward Hall defined, "A high-context … communication or message is one in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message." Edward T. Hall, *Beyond Culture* (New York: Doubleday, 1976), p.79.

dependence on logic".[49] By contrast, "Westerners were more 'analytic', avoiding contradiction, focusing on objects removed from their context, and more reliance on logic".

The Yin-Yang school of philosophy is also ideal for addressing complex challenges in the intellectual property field. The reasons are twofold. First, intellectual property law and policy is fast-evolving, especially in the past few decades. Because this school of thought was designed with the process of perpetual change in mind, it is especially well-equipped to keep pace with the rapid developments in this area. As Professor Wang observed:

> "The importance of yinyang lies in the sense of working with uncertainty. Uncertainty as a worldview calls for a mechanism or system to negotiate it, and yinyang fills this conceptual role."[50]

Secondly, the Yin-Yang school of philosophy "was not only a source of conceptualization but also a practical guide or strategy".[51] It therefore lends itself to providing new ideas for future intellectual property law and policy. Although this philosophical school seems to be characterised by uncertainty, indeterminacy and instability, its outlook is actually "dynamic and not static".[52] As Professor Chan explained:

> "The emphasis is on principles and laws of operation. … And the end is an ordered nature rather than chaos. In point of process, there is contradiction as well as harmony, and in point of reality, there is unity in multiplicity. The apparent dualism and pluralism are, in each case, a dynamic monism through the dialectic."[53]

In sum, the Yin-Yang school of philosophy does not speak to how one should live one's life or how one could become a *junzi* (a gentleman or superior person in the Confucian world). Instead, it explains the shape of the world order and provides what Benjamin Schwartz called "correlative cosmology" or "correlative anthropocosmology".[54] From an intellectual property standpoint, the primary takeaway of the Yin-Yang school of philosophy is its insights into the different relationships within the intellectual property order—whether domestic or global. Compared with the works of Locke, Hegel, Kant and other Western philosophers, however, the Yin-Yang school speaks rather little about the nature or justification of intellectual property rights.

Correlative thinking

Although the Yin-Yang school of philosophy may be unfamiliar to many Western readers, its dualistic mindset and correlative mode of thinking[55] bear very strong resemblance to two lines of scholarship that have slowly emerged in the intellectual property field.

The first line of scholarship concerns the study of the intellectual property system as a complex adaptive system, or a complex ecosystem, which often utilises complexity theory and systems thinking. As J.B. Ruhl reminded us:

> "The great lesson of dynamical systems theory for law reform … is that it is the system that counts as much as the rules, and that we cannot effectively change only one variable of that equation and expect the others to remain static. Ceteris paribus doesn't exist. Our legal institutions, however, have become prolific producers of rules of conduct, and our legal theory has focused for the most part on

[49] Mahbubani, *Can Asians Think?* (2009), p.10.
[50] Wang, *Yinyang* (2012), p.55.
[51] Wang, *Yinyang* (2012), p.19.
[52] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.245.
[53] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.245.
[54] Benjamin I. Schwartz, *The World of Thought in Ancient China* (Cambridge, MA: Belknap Press of Harvard University Press, 1985), p.350.
[55] On this mode of thinking, see Graham, *Yin-Yang and the Nature of Correlative Thinking* (1986).

> divining the meta-rules to explain those rules. We need some attention to the system at the structural level."[56]

In Professor Ruhl's view, injecting systems thinking into the study of law and legal reform is important:

> "If society evolves in response to changes in law, and vice versa, then law and society must co-exist in an evolving system. Each needs the other to define itself."[57]

To some extent, the interactions between the different components in a complex system are similar to what the Yin-Yang school of philosophy has taught us about *xiangyi* (interdependence) and *jiaogan* (interaction or resonance). This similarity is understandable considering that "[y]inyang thought has been a kind of complexity thinking, in which the whole is perceived through multiple interactions".[58]

Like the Yin-Yang school of philosophy, complexity theory and systems thinking capture "the complex manner in which … components interact with one another" in an integrated system.[59] As meteorologist Edward Lorenz put it succinctly, the flap of a butterfly's wings in Brazil could set off a tornado in Texas.[60] Although complex systems have governing meta-principles, we may not be able to "find them by slicing up the system into smaller parts".[61] Thus, it is important for us to develop a holistic perspective of the system. Such a perspective will allow us to focus on the interactions among the different components and thereby develop "a greater appreciation of the forces at play in the interaction[s]".[62]

Secondly, complexity theory and systems thinking enable us to focus on the self-correction mechanisms within the system, thereby inviting us to focus on adaptiveness and to locate the tipping point at which the system goes from order to chaos. As Stuart Kauffman observed:

> "[C]omplex systems constructed such that they are poised on the boundary between order and chaos are the ones best able to adapt by mutation and selection. Such poised systems appear to be best able to coordinate complex, flexible behavior and best able to respond to changes in their environment."[63]

Thirdly, complexity theory and systems thinking highlight the interactions among the different components of the system. It reminds us that laws and policies, including intellectual property laws and policies, may have spillover effects and unintended consequences. A case in point is the widely criticised anti-circumvention provision of the US Digital Millennium Copyright Act of 1998.[64] Although this ill-drafted provision was initially designed to protect the technological measures deployed by copyright holders, it has since been repeatedly misused to stifle innovation and competition over such products as printer toner cartridges, garage door openers, electronic pets and voting machines.[65] The provision has also upset the historical balance between copyright interests and access to information, thus raising serious concerns about free speech, privacy, academic freedom, learning, culture and democratic discourse.

[56] J.B. Ruhl, "Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake-up Call for Legal Reductionism and the Modern Administrative State" (1996) 45 Duke L.J. 849, 916–917.

[57] Ruhl, "Complexity Theory as a Paradigm for the Dynamical Law-and-Society System" (1996) 45 Duke L.J. 849, 851.

[58] Wang, *Yinyang* (2012), p.14.

[59] Daniel F. Spulber and Christopher S. Yoo, "On the Regulation of Networks as Complex Systems: A Graph Theory Approach" (2005) 99 Nw. U. L. Rev. 1687, 1693.

[60] Edward Lorenz "describes a Brazilian butterfly that by beating its wings creates a movement of air that by joining with other currents transforms the weather in Texas". Paul D. Carrington, "Butterfly Effects: The Possibilities of Law Teaching in a Democracy" (1992) 41 Duke L.J. 741, 743 (quoting Edward Lorenz, "Predictability: Does the Flap of a Butterfly's Wings in Brazil Set Off a Tornado in Texas?", Address to the Annual Meeting of the American Association for the Advancement of Science in Washington, DC, December 29, 1979).

[61] Ruhl, "Complexity Theory as a Paradigm for the Dynamical Law-and-Society System" (1996) 45 Duke L.J. 849, 893.

[62] Ruhl, "Complexity Theory as a Paradigm for the Dynamical Law-and-Society System" (1996) 45 Duke L.J. 849, 853.

[63] Stuart A Kauffman, *The Origins of Order: Self-Organization and Selection in Evolution* (New York: Oxford University Press, 1993), p.29.

[64] For criticisms of this provision, see Tarleton Gillespie, *Wired Shut: Copyright and the Shape of Digital Culture* (Cambridge, MA: MIT Press, 2007); Jessica Litman, *Digital Copyright* (Amherst: Prometheus Books, 2001), pp.122–145; Ian R. Kerr, Alana Maurushat and Christian S. Tacit, "Technical Protection Measures: Tilting at Copyright's Windmill" (2002) 34 Ottawa L. Rev. 7; Peter K. Yu, "Anticircumvention and Anti-anticircumvention" (2006) 84 Denv. U. L. Rev. 13.

[65] Peter K. Yu, "P2P and the Future of Private Copying" (2005) 76 U. Colo. L. Rev. 653, 725–726.

The second line of scholarship that bears strong resemblance to the correlative thinking espoused in the Yin-Yang school of philosophy is the emerging discussion of intergenerational equity in the intellectual property context. In his book on intellectual property justifications, Robert Merges discussed "intergenerational considerations".[66] In November 2010, the University of Wisconsin Law School also held an interesting symposium on "Intergenerational Equity and Intellectual Property".[67] As Shubha Ghosh, one of the event's organisers, observed:

> "At the surface, intellectual property law promotes progress, incentivizes invention and creation, supports innovation, leads to economic growth and development, and enriches the public domain. Depending on whom you ask, copyright, patent, trade secret, trademark, and related doctrines aid in reaching one or more of these goals. What these goals have in common is some notion of the future. Certainly all law aims to make a better world, but intellectual property has as its objective the dissemination of new products, ideas, services, and technologies that serve present and future generations. With concepts of prior art and public domain, intellectual property serves as a bridge between past and present with the artifacts of the present as tools for the future."[68]

In the United States, for instance, the constitutional clause that granted Congress the enumerated power to enact copyright and patent laws focuses on the efforts "to promote the Progress of Science and useful Arts".[69] To a large extent, intellectual property law and policy—in the United States and elsewhere—has always been about intergenerational equity.

A specific area of intellectual property law and policy that has prominently featured intergenerational equity questions concerns the protection of genetic resources, traditional knowledge and traditional cultural expressions. Although such protection aims to provide both economic and non-economic benefits to the present members of traditional and indigenous communities, it also underscores the need for preservation and conservation of cultural heritage[70] as well as the continued, dynamic development of these communities. As Madhavi Sunder reminded us:

> "Traditional people move, intermarry, share ideas, and modify their skills and products to the shifting demands of the market and their culture. These activities are not merely strategic and pragmatic, but are evidence of a healthy and dynamic culture."[71]

The protection of genetic resources, traditional knowledge and traditional cultural expressions is as much about the present members of indigenous and traditional communities as it is about their future members. It is therefore no surprise that these communities, along with developing country governments and nongovernmental organisations, were relieved to learn about the recent renewal of the mandate of the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore at this year's General Assembly of the World Intellectual Property Organization (WIPO).[72]

Another area of intellectual property law and policy that has made intergenerational equity questions salient concerns the debates involving intellectual property and sustainable development. Although this mode of development did not garner major international attention until after the 1992 Earth Summit in Rio de Janeiro, the Yin-Yang school of philosophy—which "offers a normative model with balance, harmony, and sustainability as ideals"—provides important insight into sustainable development.[73] Indeed,

[66] Merges, *Justifying Intellectual Property* (2011), pp.281–286.
[67] Symposium "Intergenerational Equity and Intellectual Property" [2011] Wis. L. Rev. 103–562.
[68] Shubha Ghosh, "Foreword: Why Intergenerational Equity" [2011] Wis. L. Rev. 103, 103.
[69] US Constitution art.I s.8 cl.8.
[70] Peter K. Yu, "Cultural Relics, Intellectual Property, and Intangible Heritage" (2008) 81 Temp. L. Rev. 433, 471–473.
[71] Madhavi Sunder, "The Invention of Traditional Knowledge" (Spring 2007) 70 Law & Contemp. Probs. 97, 109.
[72] Catherine Saez and William New, "WIPO Assembly Extends Talks on Traditional Knowledge, Design; Sets Policy for New Offices", available at *http://www.ip-watch.org/2015/10/15/wipo-assembly-extends-talks-on-traditional-knowledge-design-sets-policy-for-new-offices/* [Accessed November 19, 2015].
[73] Wang, *Yinyang* (2012), p.3.

the relationship between nature and man, or between heaven and humanity, has been a longstanding focus of Chinese thought.[74] A case in point is the concept of *tianren ganying* that noted Chinese philosopher Dong Zhongshu (179–104 BC) advanced to describe "the resonance between heaven and humanity".[75]

Examples of the debates involving intellectual property and sustainable development are those concerning intellectual property and climate change[76] as well as those addressing the relationship between the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and the Convention on Biological Diversity.[77] Viewed from a sustainable development perspective, the key question in the intellectual property debate is not whether we should have existing laws and policies, or even whether we should have an intellectual property system in the first place. Rather, it is what mix of laws and policies—intellectual property or otherwise—would best enable us to achieve the sustainable development of creativity and innovation. Specifically, it is about how laws and policies can be brought together to "meet our current needs while preserving the potential for future generations to meet their own needs".[78]

It is therefore no surprise that policy makers and commentators have begun to explore how to promote creativity and innovation by using alternative arrangements outside the intellectual property system.[79] In her recent report on patent policy and the right to science and culture, the UN Special Rapporteur in the Field of Cultural Rights also noted the need for these arrangements in addition to policy space and flexibilities:

> "Particularly in areas characterized by high social need but low ability to pay, alternative policies for incentivizing technological development are important, but remain too scarce to meet human rights objectives, including the right to health. Models include government grants and procurements, advance purchase commitments, tax incentives for research and development, prizes and other means. These mechanisms should contain provisions on access and be empirically evaluated to gauge how well they meet the needs of the population."[80]

Lessons and illustrations

In most intellectual property debates, the central question is how to strike an appropriate balance between proprietary interests and public access needs. While proprietary interests are on one end of this spectrum, public access needs are on the other end. Oftentimes, the balancing task is conducted in economic terms, and the goal is to strike an optimal balance between the two ends. The use of cost-benefit analyses to locate this balance is especially common following the rise of economic analysis of intellectual property law and policy in the United States and other parts of the world.[81]

Finding a compromise on a linear continuum, however, is not the only way to locate this balance. Nor is it the best way to do so. For many policy makers, commentators and nongovernmental organisations, such an approach is not only unsatisfactory but also overly simplistic. As Daniel Gervais rightly reminded

[74] Chan, *A Sourcebook in Chinese Philosophy* (1963), p.246.
[75] Wang, *Yinyang* (2012), p.94.
[76] E.g. Joshua D. Sarnoff (ed.), *Research Handbook on Intellectual Property and Climate Change* (Cheltenham: Edward Elgar Publishing, 2016) (forthcoming).
[77] Paragraph 19 of the Doha Ministerial Declaration called on the Council for TRIPS "to examine … the relationship between the TRIPS Agreement and the Convention on Biological Diversity [and] the protection of traditional knowledge and folklore".
[78] Peter K. Yu, "Intellectual Property and the Information Ecosystem" [2005] Mich. St. L. Rev. 1, 16.
[79] E.g. Thomas Pogge, Matthew Rimmer and Kim Rubenstein (eds), *Incentives for Global Public Health: Patent Law and Access to Essential Medicines* (Cambridge: Cambridge University Press, 2010), pp.133–283.
[80] Special Rapporteur in the Field of Cultural Rights, "Report of the Special Rapporteur in the Field of Cultural Rights" (2015) U.N. Doc. A/70/279, para.91 (Farida Shaheed).
[81] E.g. William M. Landes and Richard A. Posner, *The Economic Structure of Intellectual Property Law* (Cambridge, MA: Belknap Press of Harvard University Press, 2003).

us, "Balance … is not, contrary to what one often reads or hears in policy debates concerning intellectual property, a simple axis with rights holders at one end and users of intellectual property on the other."[82]

The correlative mode of thinking espoused in the Yin-Yang school of philosophy does provide an attractive alternative. Viewed through a yin-yang lens, the task at hand is no longer about how to locate the balance on a linear continuum—perhaps, with mathematical equations. Instead, the task is about striking an appropriate non-linear, dynamical balance within a pluralistic order—that is, how we can shape the relationships between the different actors, interests and forces, knowing full well that all of these components will continue to coexist and that each of them may exert influence on one another to varying degrees at different times and in disparate contexts. After all, the Yin-Yang school of philosophy focuses on the "condition[s] in which there exist two opposite but related and interdependent ideas or objects".[83] As Professor Wang observed, "[b]ecause of [the] dependence on context, a single thing can be yin in one way and yang in another".[84]

Given the potential for uncertainty, indeterminacy and instability, the Yin-Yang school of philosophy may not offer immediate appeal to economists, lawyers, judges, policy makers and commentators. Nevertheless, this philosophical school may shed light on ways to address the ongoing intellectual property challenges confronting both emerging economies and the digital environment. To help us conceptualise how this school of thought can target these complex challenges, this article introduces two different exhibits.

Emerging economies

The first exhibit concerns the rapid intellectual property developments in large middle-income countries. Although the developments in these countries are arguably promising, they have been largely uneven due to the countries' vast sizes, complex economies and sometimes conflicting laws and policies.[85] Cases in point are Brazil, China and India.

In regard to Brazil, Nobel Laureate Michael Spence noted the country's "dual economy", which consists of "a relatively rich one whose growth is constrained by the normal forces that constrain the growth of relatively advanced economies, and a poor one where the early-stage growth dynamics … just didn't start, owing to its separation from the modern domestic economy and the global economy".[86] With respect to China, commentators have discussed how the economic and technological developments in the major cities and the coastal regions far exceed those in the inner and rural areas.[87] As I noted in an earlier work, China should be "recognize[d] … as a 'country of countries,' rather than a homogenous one".[88] Finally, pertaining to India, Fareed Zakaria reminded us that the country "might have several Silicon Valleys, but it also has three Nigerias within it—that is, more than 300 million people living on less than a dollar a day".[89]

Consider China more specifically. Even with several overhauls of its intellectual property system and a decade-and-a-half-long membership to the World Trade Organization, the country remains the hotbed of piracy and counterfeiting. As the International Trade Commission noted in its 2011 report:

[82] Daniel J. Gervais, "TRIPS and Development" in Daniel J. Gervais (ed.), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS-Plus Era*, 1st edn (Oxford: Oxford University Press, 2007), p.49.
[83] Wang, *Yinyang* (2012), p.3.
[84] Wang, *Yinyang* (2012), p.7.
[85] Peter K. Yu, "The Middle Intellectual Property Powers" in Randall Peerenboom and Tom Ginsburg (eds), *Law and Development in Middle-Income Countries: Avoiding the Middle-Income Trap* (Cambridge: Cambridge University Press, 2014), p.98–99.
[86] Michael Spence, *The Next Convergence: The Future of Economic Growth in a Multispeed World* (New York: Farrar, Straus and Giroux, 2011), p.204.
[87] Peter K. Yu, "Intellectual Property, Economic Development, and the China Puzzle" in Gervais (ed.), *Intellectual Property, Trade and Development* (2007), p.203.
[88] Peter K. Yu, "From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China" (2006) 55 Am. U. L. Rev. 901, 963.
[89] Fareed Zakaria, *The Post-American World* (New York: W.W. Norton, 2008), p.133.

> "firms in the U.S. [intellectual property]-intensive economy that conducted business in China in 2009 reported losses of approximately $48.2 billion in sales, royalties, or licence fees due to [intellectual property rights] infringement in China".[90]

In its latest *Global Software Survey*, the Business Software Alliance also estimated that, China had a rather disappointing unlicensed software rate of 74 per cent in 2013, with a total commercial value of about $8.767 billion.[91]

Nevertheless, there is no denying that China has now slowly emerged as an innovative power. According to the latest WIPO statistics, the country had the world's third largest volume of applications under the Patent Cooperation Treaty in 2014, behind only the United States and Japan.[92] Among all the corporate applicants, Huawei Technologies and ZTE Corporation had the largest and third largest number of applications, respectively. In the same period, China also ranked seventh in filing international trademark applications under the Madrid Agreement Concerning the International Registration of Marks and its related protocol. With 20,309 designations, China was the world's "most designated member country in international registrations" within the Madrid System.

Given these two drastically different pictures, it is no surprise that China critics have continued to emphasise the country's massive piracy and counterfeiting problems. It is also understandable why China defenders—or apologists, as these critics would call them—have underscored the country's dramatic progress in recent intellectual property reforms. Because these two rival camps often talk past each other, they have thus far failed to work together to come up with solutions that will help strengthen intellectual property protection and enforcement in the country. They also do not realise that their view only captures one side of the coin—be it the promising or less attractive one.

The Yin-Yang school of philosophy, however, will reconcile these two seemingly contradicting views. Instead of determining which camp is right, it reminds both camps that their views, while somewhat contradictory, can be equally valid. After all, whether a certain view is valid depends largely on the context in which the country's intellectual property reforms are being assessed. As in all things within the yin-yang cosmology, views on these reforms are highly context-dependent.

In the near future, China is likely to emerge as a highly innovative power while at the same time remaining as the world's biggest pirate nation.[93] Such development is possible considering the country's vast size, political and economic complexities, and often internally inconsistent laws and policies. To provide support for this disturbing forecast, consider the 2014 figures on invention patents provided by the State Intellectual Property Office in China. Jiangsu, Shandong and Guangdong provinces—the three provinces with the largest volumes of home applications—had a total of 146,660, 77,298 and 75,147, respectively.[94] Meanwhile, Gansu, Yunnan and Jiangxi provinces had a total of only 4,986, 4,732 and 4,688, respectively. These figures were slightly over one-twentieths of the figure in Guangdong or Shandong province and one-fortieths of the figure in Jiangsu province. Given these highly contrasting statistics, it is easy to see why the slow-growing provinces are more reluctant to embrace intellectual property reforms than their fast-growing counterparts.

To further complicate matters, although history has seen countries crossing over from the less respectful side of the intellectual property divide to the more promising one—the United States, Japan and South

[90] US International Trade Commission, *China: Effects of Intellectual Property Infringement and Indigenous Innovation Policies on the U.S. Economy* (Washington, 2011), p.xiv.

[91] Business Software Alliance, *The Compliance Gap: BSA Global Software Survey* (Washington, 2014), p.4.

[92] World Intellectual Property Organization, "Telecoms Firms Lead WIPO International Patent Filings", available at *http://www.wipo.int/pressroom/en/articles/2015/article_0004.html* [Accessed November 19, 2015].

[93] On China's rise as an innovative power, see Shaun Rein, *The End of Cheap China: Economic and Cultural Trends That Will Disrupt the World* (Hoboken: John Wiley & Sons Inc, 2012); Peter K. Yu, "The Rise and Decline of the Intellectual Property Powers" (2012) 34 Campbell L. Rev. 525, 529–532; Richard P. Suttmeier and Yao Xiangkui, "China's IP Transition: Rethinking Intellectual Property Rights in a Rising China" (2011) The National Bureau of Asian Research, NBR Special Report No.29.

[94] State Intellectual Property Office, "Table 2 Distribution of Applications for Inventions Received from Home 2014", available at *http://english.sipo.gov.cn/statistics/2014/12/201502/t20150204_1071540.html* [Accessed November 19, 2015].

Korea being some of the more notable instances[95]—no country has ever stayed on both ends of the spectrum at the same time. If my forecast is indeed correct—that China will emerge as a highly innovative power while at the same time remaining as the world's biggest pirate nation—we will need to come up with new theories, concepts, vocabularies and even schools of thought to address this unforeseen situation.

To some extent, the challenges confronting China—and, for that matter, other large, middle-income countries (such as Brazil, India and Indonesia)—are not that different from what the world experienced in the past two decades following the adoption of the TRIPS Agreement. The protection and enforcement levels built into this one-size-fits-all—or, more precisely, super-size-fits-all—regime simply do not provide equal benefits to developed, developing and least developed countries. The only difference in the China case is that the contradictions now occur within the national intellectual property system, as opposed to the global TRIPS-based system. Striking an appropriate nationwide balance within the Chinese intellectual property system has indeed been difficult.[96]

The digital environment

The second exhibit concerns internet users, a key group of stakeholders in the information society, or what some have called the complex digital ecosystem. Commentators have lamented how traditional copyright doctrines have overlooked the important interests of consumers and internet users.[97] As Julie Cohen put it bluntly, "copyright is first and foremost a law of authors' rights".[98]

In recent years, however, judges, policy makers and commentators have slowly embraced laws, policies and proposals addressing the important needs of users, especially in the digital environment. For example, the Canadian Supreme Court led the way by introducing "users' rights" in *CCH Canada Ltd v Law Society of Canada* more than a decade ago.[99] Quoting David Vaver's scholarship, Chief Justice McLachlin declared: "User rights are not just loopholes. Both owner rights and user rights should therefore be given the fair and balanced reading that befits remedial legislation."[100] In the Canadian Copyright Modernization Act, the country's recently revised statute, Canada further introduced a special exception for the development of non-commercial user-generated content.[101] Building on this particular provision, internet user groups in Hong Kong have also advocated the introduction of an exception for non-profit-making user-generated content as part of the ongoing digital copyright reform.[102]

The rethinking of the role of internet users in the complex digital ecosystem is highly important because users are no longer passive consumers, as those found in the pre-internet days. Instead, they are now part of a large and highly diverse group, consisting of bloggers, vloggers, fanfic writers, mash-up artists, video producers, citizen journalists, cultural critics, media commentators and product reviewers. They have actively participated in the creative process, leading some commentators to describe them as "prosumers".[103] As Don Tapscott and Anthony Williams described in the music context:

[95] Peter K. Yu, "The Global Intellectual Property Order and Its Undetermined Future" (2009) 1 WIPO J. 1, 13.
[96] Peter K. Yu, "Intellectual Property Geographies" (2014) 6 WIPO J. 1, 3–4.
[97] E.g. Joseph P. Liu, "Copyright Law's Theory of the Consumer" (2003) 44 B.C. L. Rev. 397.
[98] Julie E. Cohen, "The Place of the User in Copyright Law" (2005) 74 Fordham L. Rev. 347, 348.
[99] *CCH Canada Ltd v Law Society of Canada* [2004] SCC 13.
[100] *CCH Canada Ltd v Law Society of Canada* [2004] SCC 13 at [48].
[101] Canadian Copyright Modernization Act 2012 s.29.21. On this provision, see Teresa Scassa, "Acknowledging Copyright's Illegitimate Offspring: User-Generated Content and Canadian Copyright Law" in Michael A. Geist (ed.), *The Copyright Pentalogy: How the Supreme Court of Canada Shoot the Foundations of Canadian Copyright Law* (Ottawa: University of Ottawa Press, 2013).
[102] Peter K. Yu, "Can the Canadian UGC Exception Be Transplanted Abroad?" (2014) 26 Intell. Prop. J. 175.
[103] E.g. Don Tapscott, *Grown up Digital: How the Net Generation Is Changing Your World* (New York: McGraw-Hill, 2009), pp.208–212; Don Tapscott and Anthony D. Williams, *Wikinomics: How Mass Collaboration Changes Everything* (New York: Portfolio, 2006), pp.124–150. This term was coined by Alvin Toffler, *The Third Wave* (New York: William Morrow, 1980), pp.265–288.

> "[R]emixing music is not about copying artistic works; it's about modifying, embellishing, appending, reinventing, and mashing them together with other elements. Most of all, remixing music is about being a producer, participating in the creative enterprise, and sharing your creations with others."[104]

The understanding of the "prosumer" concept—and "the [blurring] gap between producers and consumers"[105]—is particularly relevant to our discussion of the Yin-Yang school of philosophy. Viewed through a yin-yang lens, internet users are neither producers nor consumers. Instead, they are both producers and consumers at the same time. Whether they play the roles of producers or consumers will largely depend on the type of situation involved.

The variations in these situations immediately bring to mind Julie Cohen's concept of the "situated user". As she explained:

> "Unlike the economic user [who enters the market with a given set of tastes in search of the best deal], the situated user is more than a narrow, self-interested consumer; unlike the romantic user [whose life is an endless cycle of sophisticated debates about current events, discerning quests for the most freedom-enhancing media technologies, and home production of high-quality music, movies and open-source software], … she knows when to sit back, have a beer, and fire up the TiVo. Unlike the postmodern user [who exercises limited and vaguely oppositional agency in a world in which all meaning is uncertain and all knowledge relative], the situated user has the capacity and the will to link her own creative projects aspirationally to larger dreams of artistic and personal progress."[106]

In Professor Cohen's view, copyright law and policy needs to pay greater attention to these situated users "because neither [their] tastes nor [their] talents are so well formed".[107] As a result, "[b]oth [their] patterns of consumption and the extent and direction of [their] own authorship will be shaped and continually reshaped by the artifacts, conventions, and institutions that make up [their] cultural environment".[108] To help accommodate the needs and interests of these situated users, Professor Cohen advanced the following proposal:

> "Copyright should recognize the situated, context-dependent character of both consumption and creativity, and the complex interrelationships between creative play, the play of culture, and progress, and should adjust its baseline rules—not simply its exceptions—accordingly. Scholars and policy makers should ask how much latitude the situated user needs to perform her functions most effectively, and how the entitlement structure of copyright law might change to accommodate that need. In particular, they should be prepared to ask whether the situated user is well served by the current copyright system of broad rights and narrow, limited exemptions, or whether she would be better served by a system that limits the rights of copyright owners more narrowly in the first instance."[109]

Thus far, most of the literature on user-generated content or user-based activities has focused on copyright law and cyberspace, due in large part to the wide use of the internet and other digital technologies as well as the proliferation of parodies, remixes and mash-ups. However, recent developments in 3D printing technology and synthetic biology have suggested that user-based activities in the intellectual property context should not be limited to copyright and cyberspace alone. As these new technologies become more affordable and publicly accessible, the activities they generate will affect other areas of intellectual property

[104] Tapscott and Williams, *Wikinomics* (2006), pp.137–138. On remix, see Lawrence Lessig, *Remix: Making Art and Commerce Thrive in the Hybrid Economy* (New York: Penguin Press, 2008).
[105] Tapscott and Williams, *Wikinomics* (2006), p.125.
[106] Cohen, "The Place of the User in Copyright Law" (2005) 74 Fordham L. Rev. 347, 372.
[107] Cohen, "The Place of the User in Copyright Law" (2005) 74 Fordham L. Rev. 347, 349.
[108] Cohen, "The Place of the User in Copyright Law" (2005) 74 Fordham L. Rev. 347, 349.
[109] Cohen, "The Place of the User in Copyright Law" (2005) 74 Fordham L. Rev. 347, 374.

law, including trademarks, patents and industrial designs.[110] As a result, intellectual property theories will have to be prepared to account for a more complex, and at times contradicting, role of users.

The two exhibits in this section have highlighted the growing complexity of the ongoing intellectual property challenges confronting both emerging economies and the digital environment. Although it is tempting for judges, policy makers and commentators to categorise their difficult policy choices as binary—for example, between protection and access, between costs and benefits and between control and convenience—yin-yang thinking suggests that binary choices may not adequately capture the challenges confronting these decision makers. Instead, they may need to think more deeply about the relationships between the varying players, interests and forces as well as how to shape these relationships in an effort to strike an appropriate non-linear, dynamical balance in a pluralistic order. As James Boyle reminded us: "The relationship between the public domain and the restrictions around it is … a complex dynamic equilibrium, not a simplistic binary choice."[111]

Conclusion

Although Locke, Hegel, Kant, Marx, Rawls and Nozick have been repeatedly cited in intellectual property literature to either provide justifications for intellectual property rights or to critique these justifications, questions involving intellectual property philosophy are wide-ranging and multi-faceted. This article, while brief and preliminary, aims to point out that many other schools of philosophy exist to provide insight into the ongoing intellectual property challenges concerning both emerging economies and the digital environment. Having a focus on contexts, relationships and adaptiveness as well as a high tolerance for contradictions, Asian philosophy is particularly attractive in this respect. It is my hope that this article will nicely complement the other articles in this special issue—which cover a broad spectrum of topics, ranging from metaphysics to Lockean justifications to moral philosophy. I hope you will enjoy this issue.

[110] E.g. Deven R. Desai and Gerard N. Magliocca, "Patents, Meet Napster: 3D Printing and the Digitization of Things" (2014) 102 Geo. L.J. 1691; Lucas S. Osborn, "Regulating Three-Dimensional Printing: The Converging Worlds of Bits and Atoms" (2014) 51 San Diego L. Rev. 553.

[111] James Boyle, "Foreword: The Opposite of Property?" (Winter/Spring 2003) 66 Law & Contemp. probs. 1, 12.